

10/021,951
IN THE CLAIMS

This listing of the claims will replace all prior versions, listings, of claims in the application:

Claims 1-3 (canceled)

Claim 4 (currently amended): The method according to Claim 22 25 further comprising:

limiting the pressure of the control volume, and emptying, when an upper pressure level is reached, the control volume until a low closing pressure has been established.

Claim 5 (currently amended): The method according to Claim 22 25 further comprising:

venting or emptying the control volume by way of a switching valve which is actuated by pressure switch means, and determining then a leak flow rate as a function of the closing time, the pressure in the control volume and the state equations of the working medium.

Claim 6 (previously presented): The method according to Claim 4 further comprising:

recording an upper pressure level and a low closing pressure by pressure switches or by a pressure sensor, and determining then a leak flow rate as a function of the closing time, the pressure in the control volume and the state equations of the working medium.

Claim 7 (previously presented): The method according to claim 5 further comprising:

driving the switching valve by means of a control programme in such a way that when a test cycle is initiated, the individual steps of the test cycle take place automatically.

Claim 8 (previously presented): The method according to claim 7 wherein

the test cycle comprises:

- opening the switching valve and venting the control volume,
- closing the control volume and starting the control time,

10/021,951

C1
end
- determining a pressure rise by recording the control volume pressure over time, and

- evaluating and generating a message or an alarm in the event of predetermined pressure rise values being exceeded.

Claims 9-12 (Canceled)

Claim 13 (previously presented): The device according to Claim 24,

C2
wherein when the control volume is vented or emptied by said flow resistance, a further pressure sensor is arranged downstream of the filter, and to determine the degree of soiling the differential pressure between the pressure in the control volume and the pressure downstream of the filter is formed or measured, it being possible, if appropriate, to generate a command and/or a signal to change the filter.

Claims 14-15 (canceled)

Claim 16 (previously presented): The device according to Claim 24,

wherein when the switching valve is actuated by means of said pressure-relief valve the switching valve can be driven by means of an evaluation unit or a position regulator.

C3
Claim 17 (previously presented): The device according to claim 24,

wherein when the switching valve is actuated by means of said pressure-relief valve the switching valve is a directional control valve.

Claim 18 (previously presented): The device according to Claim 24,

wherein when the switching valve is actuated by means of said pressure-relief valve the switching valve is a 2/2 directional control valve.

Claim 19. (previously presented): The device according to claim 24,

wherein the control volume can be vented into a closed or closeable volume.

Claim 20 (previously presented): The device according to

10/021,951
claim 24,

characterized in that

C3
end
when suitable leak flow rate limit values are reached, a command and/or a signal to change the valve-rod seal can be generated automatically.

Claim 21 (previously presented): The device of claim 24 wherein said valve can be monitored remotely.

~~Claim 22 (canceled)~~

Claim 23 (previously presented): A method for determining leaks at the seal of a valve or a valve rod, comprising:

determining the pressure, if appropriate as a function of time, in a control volume between a first valve-rod seal and a second valve-rod seal;

C4
using the determined pressure to calculate the leak flow rate, venting the control volume by way of a flow resistance, upstream of which there is a particle filter;

measuring the differential pressure between the control volume pressure and the pressure downstream of the flow resistance; and

determining the degree of soiling of the filter from the measured differential pressure.

Claim 24 (previously presented): A device for determining leaks at the seal of a valve or a valve rod comprising:

a control volume designed between a first valve-rod seal and a second valve-rod seal of said valve or valve rod;

at least one pressure sensor and/or pressure switch for monitoring the pressure of said control volume;

an evaluation unit or a position regulator connected to said control volume for determining a leak flow rate in said control volume; and

10/021,951

a flow resistance having a filter connected upstream of the flow resistance or a switching valve for venting or emptying said control volume, said switching valve actuatable by means of either a pressure-relief valve or a pressure switch.

Claim 25 (new): A method for determining at the seal of a valve or a valve rod leaks of a working medium being controlled by said valve, comprising:

end
determining in a control volume between a first valve-rod seal and a second valve-rod seal, if appropriate as a function of time, the pressure of the working medium controlled by the valve that leaks into said control volume;

using the determined pressure to calculate the leak flow rate of said working medium leaking into said control volume;

using the value obtained for the leak flow rate to draw conclusions as to whether the seal is sealed, and in this way a seal replacement time is determined; and

measuring, after the control volume is discontinuously opened or emptied and then closed again, the pressure rise of the working medium controlled by the valve that leaks into the control volume.